

CLAIMS

What is claimed is:

1. A method of inhibiting an inflammatory response in a tissue expressing ghrelin receptor positive cells, comprising administering to the tissue an agent that inhibits the signaling activity of the ghrelin receptor that mediates intestinal inflammation, thereby inhibiting the inflammatory response in the tissue.
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2. A method of treating intestinal inflammation in a mammal comprising administering to said mammal an effective amount of an agent that inhibits ghrelin activity, ghrelin binding to the ghrelin receptor or the signaling activity of the ghrelin receptor that mediates intestinal inflammation.
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3. The method of Claim 1, wherein administering the agent comprises contacting the ghrelin receptor positive cells with the agent.
4. The method of Claim 1 or Claim 2, wherein the agent is selected from the group consisting of: a ghrelin antagonist, a ghrelin antibody or antigen-binding fragment thereof, a ghrelin derivative, a ghrelin inhibitor, a ghrelin receptor peptide or fragment, a ghrelin receptor inhibitor, a ghrelin receptor antagonist, a ghrelin receptor antibody or antigen-binding fragment thereof, a
15 ghrelin analog, a ghrelin receptor peptide or fragment and a non-peptide ghrelin receptor antagonist.
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5. The method of Claim 1 or Claim 2, wherein the agent is a competitive inhibitor of binding of ghrelin to the ghrelin receptor.

6. The method of Claim 1 or Claim 2, wherein the agent is a soluble isoform of the ghrelin receptor or a fragment thereof that retains the ability to bind to ghrelin.
7. The method of Claim 1 or Claim 2, wherein the agent inhibits binding to the ghrelin receptor, and wherein the agent is selected from the group consisting of: ghrelin antibodies, ghrelin receptor antagonists, ghrelin analogs and ghrelin derivatives.
8. The method of Claim 7, wherein the ghrelin receptor antagonist is a peptide or peptide analog.
9. The method of Claim 7, wherein the agent is an inhibitor of the ghrelin receptor binding activity of ghrelin.
10. The method of Claim 1 or Claim 2, where the inflammation is mediated by an autoimmune response, a parasite, a bacterium, a virus or a toxin.
11. The method of Claim 10, where the toxin is produced by *Clostridium difficile*.
12. The method of Claim 1 or Claim 2, wherein the inflammation is of the small or large intestine.
13. The method of Claim 1 or Claim 2, wherein the intestinal inflammation is associated with:
 - a) an autoimmune response;
 - b) a parasitic infection;
 - c) inflammatory diarrhea;
 - d) inflammatory bowel disease;
 - e) Crohn's disease;
 - f) ulcerative colitis;

- g) acute enterocolitis; or
- h) chronic enterocolitis.

14. Use of an agent that inhibits the signaling activity of a ghrelin receptor that mediates intestinal inflammation for the manufacture of a medicament for use in inhibiting an inflammatory response in a tissue expressing the ghrelin receptor positive cells.

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15. Use of an agent that inhibits ghrelin activity, ghrelin binding to the ghrelin receptor or the signaling activity of a ghrelin receptor that mediates intestinal inflammation for the manufacture of a medicament for use in treating intestinal inflammation in a mammal.

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16. Use of Claim 14 or Claim 15, wherein the intestinal inflammation is associated with:

- a) an autoimmune response;
- b) a parasitic infection;
- 15 c) inflammatory diarrhea;
- d) inflammatory bowel disease;
- e) Crohn's disease;
- f) ulcerative colitis;
- 20 g) acute enterocolitis; or
- h) chronic enterocolitis.

17. Use of Claim 14 or Claim 15, wherein the agent is selected from the group consisting of: a ghrelin antagonist, a ghrelin antibody or antigen-binding fragment thereof, a ghrelin derivative, a ghrelin inhibitor, a ghrelin receptor peptide or fragment, a ghrelin receptor inhibitor, a ghrelin receptor antagonist, a ghrelin receptor antibody or antigen-binding fragment thereof, a ghrelin analog, a ghrelin receptor peptide or fragment and a non-peptide ghrelin receptor antagonist.

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18. A method of treating inflammation associated with upregulation of ghrelin or ghrelin receptor in a mammal comprising administering to said mammal an effective amount of an agent that inhibits ghrelin activity, ghrelin binding to the ghrelin receptor or the signaling activity of the ghrelin receptor that mediates intestinal inflammation.
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19. The method of Claim 18, wherein the agent is selected from the group consisting of: a ghrelin antagonist, a ghrelin antibody or antigen-binding fragment thereof, a ghrelin derivative, a ghrelin inhibitor, a ghrelin receptor peptide or fragment, a ghrelin receptor inhibitor, a ghrelin receptor antagonist, a ghrelin receptor antibody or antigen-binding fragment thereof, a ghrelin analog, a ghrelin receptor peptide or fragment and a non-peptide ghrelin receptor antagonist.
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20. A method for identifying a ghrelin antagonist or a ghrelin receptor antagonist comprising the steps of:
15 a) contacting cells expressing a ghrelin receptor with a candidate ghrelin antagonist or a candidate ghrelin receptor antagonist and with ghrelin;
 b) determining MAP kinase phosphorylation in said cells which have been contacted with said candidate antagonist and with ghrelin;
 c) comparing MAP kinase phosphorylation determined in step b) with MAP kinase phosphorylation in control cells which have been contacted with ghrelin and which have not been contacted with said candidate antagonist; and
 d) selecting said candidate antagonist if MAP kinase phosphorylation determined in step b) is inhibited relative to MAP kinase phosphorylation in said control cells which have been contacted with ghrelin and which have not been contacted with said candidate antagonist,
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25 wherein said candidate antagonist is identified as a ghrelin antagonist or a ghrelin receptor antagonist.

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21. The method of Claim 20 wherein steps a) to d) are repeated with a range of different concentrations of said candidate antagonist.
22. The method of Claim 20 wherein in step a), said cells are contacted with said candidate antagonist prior to contact with ghrelin.

5 23. The method of Claim 20 wherein said cells are intestinal epithelial cells.

24. The method of Claim 20 wherein the cells expressing a ghrelin receptor is a cell line selected from the group consisting of: IEC-GHS-R and NCM460-GHSR.